



Seismic Technology: How It Works

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Hi, my name is Julia Baggs and I work at Chevron on a team that explores the earth for oil and natural gas. Today, we're going to talk about how we use technology to aid us in the search for oil and natural gas deep beneath the surface of the earth.

Oil and natural gas are normally found in what we call reservoir rocks. These are rocks, including sandstone, that are uniquely suited to hold oil and natural gas between each of the grains of sand in the rock. There're all these little pore spaces, kind of like the pores in your skin, or in a sponge, that can hold onto these little tiny molecules.

To find the reservoirs, we use seismic technology. We can send sound waves deep into the earth and listen to them when they bounce back up using little, tiny things called geophones. They're basically electronic ears that record a signal when they hear the sound come back. The signal that we get out of them actually looks like this. It looks like a squiggle.

If we put thousands of these squiggles together in a line, then we have a slice or a cross section of the earth that we can actually see structures in.

After we collect the seismic data, we assign a team of highly educated, technically skilled geologists, geophysicists, reservoir engineers, to interpret the data, to decide where the different formations are underground, where there are structures that would be conducive to holding reservoirs of oil and natural gas.

After our teams have done their work, then it's time to drill the exploration well. A success rate of 50 percent in finding oil or natural gas in that well is actually really good in our industry. Because, after all, the data is just a representation of what's beneath the surface. But we don't know what's really down there until we drill that well.

Well, that's an overview of how we search for oil and natural gas.